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## A review of the development and current status of wound ostomy continence nurses in the mainland of China

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### ABSTRACT

Wound ostomy continence nurses (WOC nurses), developed as an important part of clinical nurse specialists play an indispensable role in the management of ostomy, all kinds of chronic wounds and incontinent dermatitis. However, there exists a gap compared with developed countries and regions. This paper provides an overview of WOC nurses in China including origin and development, training and accreditation system, roles, values and management, in order to provide references for the development of WOC nurses in China.

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### 1. Introduction

Clinical nurse specialists (CNS) is an expert who applies an expanded range of theoretical knowledge, rich clinical experience and advanced skills to the care of patients within a specialty nursing area involved in improving the quality care, reducing the cost and promoting patients' health, and provides advanced model and direction for the development of professional nursing [1]. The national health and family planning commission (NHFP) made clear in the national plan for the development of national nursing (2016–2020) that should strengthen the training of CNS and improve the professional skills during the 13th five-year plan period [2]. As a CNS on wound colostomy incontinence care, enterostomal therapist (ET) is responsible for the prevention, care and treatment of abdominal intestinal colostomy, chronic wounds and management of urinary incontinence [3], providing professional consultation and psychological care for patients and their families [4].

In 1917, Lockhart Murrery firstly presented the concept of “colostomy care” after summing 50 colostomy he had made. The American surgeon, Turnbull, devoted a lot to colostomy patients

and began to involved in ostomy care in the Cleveland clinic with his patients Norma Gill. Hence Norma Gill became first ET all over the world. In 1992, scope of practice of the ET was expanded from single enterostomy care to ostomy incontinence care, treatment of skin fistula and complicated wounds. Then, ETs was renamed WOC nurses.

With the development of society, the change of people's living habits and human disease spectrums, it is expected that ever in increasing number of individuals will suffer from complex and changeable acute and chronic wounds. Research shows that about 100 million people suffer various kinds of wound each year, and about 30 million experience chronic painless wound (including pressure ulcers, diabetic foot ulcers, venous ulcers, traumatic ulcer and tumor wounds, etc.) [5]. However, some patients not only failed to heal timely but defer [6], and even appear complications, so far as to result in death due to unreasonable measures, related products and treatment time [7]. Therefore, correctly master the treatment time and technology, use related products correctly and scientifically manage wounds is curial. As a consequence, it is imperative to cultivate high quality WOC nurses and use them effectively [8]. The purpose of this article is to review and summarize the current station of WOC nurses, explain its origin and development, training and accreditation system, scope of practice, in order to find the superiority and shortage, providing references for the development of WOC nurses in China.

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## 2. Origin and development

### 2.1. Origin and development

In 1988, Professor YU Dehong, the originator of ET, visited the Cleveland Clinic and brought the new concept to China, then established the Shanghai ostomy sodality. Norma Gill devoted a lot to the development of colostomy care in China. In 1993, she gave lectures in Shanghai and Hangzhou personally and send colostomy care books and magazines to the Shanghai ostomy sodality and supported two nurses from shanghai to participate in a training program in Australia and become the first two WOC nurses in the mainland of China [9]. Then, the Chinese Ostomy Association charged by professor YU Dehong was established in 1996, based on Changhai Hospital, Shanghai. In 2003, the WOC professional committee of the Chinese Nurses Association (CNA) was established, supporting its members by promoting educational, clinical, and research opportunities to advance the practice and guide the delivery of clinical nursing. In 2004, the first wound and incontinence academic conference was held in Shanghai, promoting the vigorous development of WOC nursing [10].

### 2.2. Definition

As defined by Wound, Ostomy and Continence Nurse Society (WOCN), which is north American and global authority academic organization, in the university of Virginia, mainly for developing core courses of three professional, WOC nursing is a multifaceted, evidence-based specialty practice incorporating a unique body of knowledge to provide excellence in prevention, health care, maintenance, therapeutic intervention, and rehabilitative care for persons with gastrointestinal, genitourinary, or integumentary system problems [4], which is within the framework of nursing that strives to advance the health care and quality of life of all affected individuals [11]. In western countries, WOC nurses are registered nurses who hold a baccalaureate degree or higher and complete a formal, accredited WOC full scope or specialty education program.

In Jul. 2001, in the conference of “Progress on Enterostomal Therapist” held by the CNA, the delegates agreed the colostomy care belongs to specialized nursing [12]. In Nov. 2003, the WOC professional committee defined ET as clinical nursing specialist on Wound, Ostomy and Continence, whose main responsibility is abdominal intestinal colostomy care, prevention and treatment of complications after colostomy, chronic wounds and the urinary incontinence care, provide consulting services for patients and their families and psychological care to promote health and return to society. As a complete subject, enterostomal rehabilitation therapy is developing vigorously in China.

There are three levels of wound care providers recognized by WOCN Society: WOC advanced practice registered nurse, WOC specialty nurse and wound treatment associate, WOCN society endorses the appropriate utilization of each level of wound care providers. Different level has significant differences in education, licensure, certification, level of autonomy, and unique abilities in wound care management [13]. At present, there are more than 1000 certified WOC nurses, but there is no clear classification of WOC nurses in China mainland, and different hospitals have various models, such as certified wound specialist and ET [14], or divided into different subspecialties (pressure ulcer and refractory wound, surgical wound, and lower limb ulcer and diabetic foot ulcer) [15].

## 3. Training and accreditation

The first training class was hold in Shanghai and followed in

Guangdong in 1996 [16]. In 2001, China began to train ET accredited by the World Council of Enterostomal Therapists (WCET) [17], which has support of global network, and provides extensive clinical practice information and education project to countries all over the world to fund ET nurses to participate in the international academic conference hosted by WCET. Under the globalized development of education, WCET advocates the “twinning project” [18], the first enterostomal therapist school in the mainland of China was established under the concerted effort of the CNA, the School of Nursing of Sun Yat-sen University, The University of Hong Kong, and the Hong Kong Stoma Therapist Association, which is the milestone in the development of stoma therapy in China. By the end of 2016, there were 12 enterostomal therapist school in the mainland of China.

### 3.1. Training

#### 3.1.1. Preparation

The requirements of taking part in the training program as listed below [19]: (1) education: college degree or higher; (2) years of working: above 5 years; (3) work experience: relevant specialized experience; (4) the number of per training session: 15–25 [20]. More attention has been paid to clinical abilities such as rich clinical experiences, independent ability to solve problems, good interpersonal relationship and coordination ability, the sense of responsibility and dedication when selecting ET candidates [21]. Meanwhile, in America and Australia, only registered nurses with bachelor degree or above can apply the formal WOC education [20]. Therefore, the average education level of ET in China is lower than that in European and American countries, especially in the early training term (2001–2005), when wound ostomy continence nurses with technical secondary school degree occupied 19.15%, college degree and bachelor degree accounted for 46.81% and 27.66% respectively, only 6.38% of which were master [6]. In the past five years, the number of nurses with college and bachelor degrees shows an increasing tendency, accounting for 45.98% and 39.08%, respectively. Nevertheless, there are still very few nurses with master degree [16].

#### 3.1.2. Curriculum and training methods

WCET education committee made the Enterostomal Therapist Nursing Education Programmes (ETNEP), providing tri-specialty education program for WOC care and any of the specialty practice areas individually [18]. The education program is made up of wound care, ostomy care, continence care and professional development, taking up for 30%, 40%, 18–20% and 12–10% respectively [22]. It is comprised of at least 180-hour theoretical studies and 180-hour clinical studies [23]. The theoretical studies are mainly to explain relevant theoretical knowledge, which adopt various forms of teaching, such as discussion, questioning and role simulation. Clinical teaching is taught mainly by certified ET through case discussions and case nursing. To ensure the students' hands-on opportunities, one ET can only teach two students during a training course.

However, compared with America, there is still a large gap. WOCNS provides different types of WOC training programs to meet various needs, and nurses can choose according to their own conditions freely. But as the development of WOC, many hospitals as WOC teaching base in different provinces set up training courses combine with the training requirements of specialized nurses in China and the nurses' needs. Take Sichuan province for example [24], the training program lasts 2 months, 160 hours for theoretical studies at least and 320 hours for clinical practice at least. The content of theory includes the development and current status of WOC, and the relevant anatomy and physiology, the new concept of

wound healing, the classification, records and the influencing factors of wound healing, etc. The content of practice includes the wound evaluation, dressing changes for acute wound and chronic refractory, replacement of ostomy appliances, etc. Unlike previous training courses, current programs pay more attention to improving clinical skills, carrying out workshop and practice as a group, and the qualified WOC nurses' demonstrating of each operation and mentoring personally.

Currently, there is no uniform training material. A book of WOC nursing, edited by the CNA, will be published by the People's Medical Publishing House in 2018. Meanwhile, the CNA will host its first WOC training program in 2018.

### 3.2. Assessment and certification

The evaluate content consists of theories, skills and product information by the means of thesis defense, case study and clinical care protocol [25]. The qualified trainees must sit the exam held by the training school (a two-part examination of theoretical knowledge and clinical skills) in order to receive a license to practice. Licensure as WOC nurses was accredited by WCET education committee [26].

## 4. Roles, values and management

### 4.1. Roles

The duty of WOC nursing includes comprehensive evaluation, the choice of products, advanced treatment, nutritional assessment and intervention, debridement, chemical burn surgery and conservative management with fistula, finding problems or potential patients, and predicting the nursing effect, so as to determine the most effective nursing measures through direct contact with the patient [27]. WOC nurses serve in pivotal roles as direct care providers, educators and consultants, researchers and managers [13]. Recently, different researchers created different working patterns. WANG Jing's "4 + 1" model of wound care team, focusing on nurture characteristics, scientific research, featured brands and team building, had promoted team members ability of specialized care, education and scientific research ability and leadership skills [15].

#### 4.1.1. Direct care providers

As clinical practitioners [27], WOC nurses expand their autonomy in direct care, that demonstrates their competences in managing patient's complex health problems, planning and implementing clinical education. (1) Ostomy care: preoperative stoma site marking, visiting and psychological consultation before operation, postoperative observation, changing ostomy appliances, health education and behavior guidance, preventing and treating complications [28], organizing colostomy sodality, and on-site and telephone consultations [4]. (2) Chronic wound care: including preventing and treatment of pressure injuries and diabetic foot, delivering care for postoperative wound infection, fat liquefaction, fistula drainage, arteriovenous ulcer, infusion exosmosis [29]. (3) Incontinence care: including prevention and treatment of perianal skin problems of patients with incontinence, pelvic floor muscle and bladder function training [30].

#### 4.1.2. Educators and consultants

Education is a major role for the WOC nurses, as they are responsible for providing varying levels of knowledge popularization to disparate groups, such as patients, staffs, family and caregivers, students and colleagues. The increased amount and availability of healthcare information from newspapers, websites

and media often leaves patients confused and in fear [5]. WOC nurses educate individuals and deliver relevant information, which fosters a sense of empowerment over their own health care and that of their families. In addition, WOC nurses participate in academic exchanges inland and abroad to learn advanced technology and new concept.

The consultant role of the CNS overlaps in some degree with the role of educator. As consultants, they encompass the specialized expertise to assist the client, staff, or healthcare system to solve problems that arise when caring for patients [31].

#### 4.1.3. Researchers and managers

Diverse of nursing problems are solved and resolutions are optimized within the evidence-based nursing practice [32]. The role as researchers enables them to summary, critique and implement relevant evidence-based research to make nursing practice scientific and specialized [16]. For instance, intervention by WOC nurses using advanced wound management techniques was more effective and cost-effective than conventional care [33]. Internet-based data management capabilities and abilities of disease risk management based on the demographic characteristics enable WOC nurses to truly communicate and cooperate with other medical personnel in a interdisciplinary team. At the same time, it brings benefits to developing a new field of this specialized subject and promotes the development of the discipline through publishing related specialized nursing researches [34].

### 4.2. The values

WOC nurses play an important role in rational utilization of medical resources, improving patient medical outcomes and increasing hospital economic and social benefits. The value and advantages of WOC nurses are shown in the following aspects [26]: (1) risk management of precursors, preventing complications and reducing the recurrence; (2) providing continuous wound management to facilitate communication and cooperation among cross-disciplinary teams and different medical institutions [35]; (3) improving the professional identity and the initiative of independent learning; (4) providing evidence-based services to develop new service protocols [28]; (5) improving the quality of medical service and patient satisfaction and loyalty, helping patients maintain or get the best functional status, or face death calmly through preventive, supportive and promote methods [6]; (6) making clear career planning and reducing the rate of turnover; (7) participating in the formulation of policies, standards and guidelines [36]. (8) combination between science and art. WOC nurses recognize the unique values among individuals and create new products, then improve existing treatments [37].

ZOU Ye's [38] randomized control trial indicated wet healing treatment of pressure sores could improve the therapeutic effect, shorten the wound healing time and hospital stay. Using remote service technology (such as Wechat platform) to push structured knowledge, it's beneficial for patients to choose knowledge of wound care of their own needs, study at any time, and two-way communication, then improve patient outcomes and the effect of health education [29]. In contrast to China, the service target of certified WOC nurses in the United States is the resident of the inpatient and long-term care institution, mainly providing the consultation and technical services and their priority is placed on providing more community-based and preventive care and improving efficiency and effectiveness of care at lower cost. Besides, in American hospitals, the common work model is multi-disciplinary teams, including physicians, clinical nurse specialist, nurse practitioner, and physical therapist. They organize a monthly group meeting, which is conducted in the form of lunch meeting,

dealing with patients' problems according to their professional scope. It is worth noting that they own the right for prescription, especially for the type of wound treatment products and local treatment [39].

#### 4.3. *The management of WOC nurses*

A wide variety of practice models have been developed based on local needs. The main patterns in China are as follows: (1) managed directly by the nursing department: hospital set up colostomy or wound specialist nurses, who are responsible for those relevant individuals; (2) affiliated by clinical departments: WOC nurses are responsible for the clinical nursing or management of consultation on WOC patients of the whole hospital [40]; (3) managed by the outpatient treatment room/center: they mainly work in the center, and are responsible for consultation of the whole hospital in part-time; (4) managed by the health education department: WOC nurses take charge of continuous nursing work in the health education center [41].

### 5. Suggestions

#### 5.1. *Establish a standardized training system*

The setting of training content should be combined with the disease incidence of our country. The theory training of WOC nurses in China is longer than that in the United States, but the clinical practice time is only half of that in the United States. Many WOC graduates are often overwhelmed by lack of practical experiences and coping strategies when faced with complex wound care problems [42]. As the change of the disease and a greater demand of high-life quality, there is an urgent need that makes us think how to establish a unified training materials and training contents, changing the way of theory study and clinical practice time in order to make it more in line with the clinical needs in China, with reference to the successful experiences of the United States simultaneously [43]. Conferences, e-newsletters webinars, and other continuing education methods are needed to develop greater clinical competencies and leadership skills.

At present, every training school has a multi-disciplinary and varied faculty, as many as 50–60 teachers per session, which may result in the curriculums without consistency and systematicness. The trainees are confused, or have trouble in solving problems, which affects the transformation from theory to clinical practice. Therefore, it is necessary to establish a communication platform for teachers to ensure the quality of teaching, based on the high level of teachers and students, and the good teaching bases. Meanwhile, trainers' education background is also a problem that cannot be ignored, and stratified training is the development trend in the future.

#### 5.2. *Building a normalized accreditation system, laws and regulations*

If nurses are to be educated to take on more complex roles, it is imperative that accreditation systems be developed and a range of practice models be implemented. At present, the certification of WOC nurses in China is international certification. There is no certification institution for WOC nurses in China and no relevant laws and regulations clearly defining its scope of practice and responsibilities, which result in limited professional practice and legal risks [41]. In the absence of national regulations, if the hospital has no relevant regulations, WOC nurses' work will not be secured and the role of WOC nurses will not be fully utilized. So there is an urgent need to establish an authoritative certification institution,

set up relevant management system, make clear of responsibilities and scope of practice, formulate relevant laws and regulations to make WOC nursing rules-based and promote its development.

Most WOC nurses belong to a specialized department, with no separate office or storage room (storage equipments, models, wound care equipment). Because of staffing and bonuses, some departments are reluctant to accept those service settings. If the management department can set up special post, and provide professional promotion ladder and appropriate increase in salary, it will be good for the development of specialty and the improvement of nursing service. To promote standardized nursing care, it's essential to unify the standard of nursing service of WOC nurses: (1) shape standard practice framework, and unify WOC nurses' duties [44], (2) raise legal awareness, and strengthen the consciousness of self-protection; (3) formulate relevant provisions so that WOC nurses can give full play to the relevant work; (4) define their positioning in hospital [45]; (5) strengthen the communication with WCET, and encourage international exchange.

#### 5.3. *Expanding the nursing role from hospital to community*

It is notable that many countries in Asia, including China, don't have well-developed primary health care system. With increasing stress on hospitals and long waiting lists, the need for community-based care is urgent. This is particularly so in the context of some wound care that could be monitored and managed at home rather than in hospitals [46]. The outcome has a tight relationship with the ability of self-management at home [47]. However, much of the role of WOC nurse development in China has been in inpatient settings. The model of continuing care protocol needs further consideration.

### 6. Summary

Major trends in the health care system present opportunities and challenges for WOC nursing. WOC specialty practice is influenced by shifts in population demographics, legislative initiatives, and rising health care costs as well as patient safety and quality concerns. WOC nurses play a crucial role in the medical atmosphere of multi-disciplinary team cooperation to improve patient care, outcomes and costs. The preparation, role function and duties are definite in foreign countries. However, due to the shortage of development and management in current China, it is difficult for WOC nurses to fulfill their internationally defined obligations. To cultivate high quality WOC nurses and offer better WOC service, managers need to strengthen training program, optimize the working environment and enhance professional quality. Moreover, the issue of a clear post responsibility and professional promotion ladder, and expanding the role from hospital to community are becoming crucial in China.

#### Contributions

Concept and theory analysis: Wang Ling; literature retrieval and translation: Liu Xiao-li; manuscript preparation: Wang Ling and Liu Xiao-li contributed equally to this article.

#### Conflicts of interest

The authors declare that they have no competing interests.

#### Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.ijnss.2018.03.002>.



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